January 23, 2012
Members of the Agencies Studying Triangle Lake

RE:Triangle Lake: Herbicide Exposures
Health risks and Research opportunity.

Dear Triangle Lake Team Members

The Triangle Lake community is concerned about the frequent twice a year aerial spraying over their community with herbicides of known and unknown harm to themselves , their children, their water sources, and their garden supplies. This spraying has been frequent and long term. Their situation is unique as they represent an entire community with potentially chronic exposure. My concerns are that 1.the investigation plan is not sufficient to determine harm . 2. A really thorough investigation could add substantial new information about herbicides never before adequately studied.

As the conservation Chair of NABA (butterfly association) I have frequently been requested to comment on Forest Policy. As a result I have the latest report Draft of Environmental Impact Statement BLM Oregon., in which these pesticides are listed, and thoroughly discussed from heath risks to water contamination and etc. You will find a summary in the pages below quoted word for word from the document. You will note that in concentrating on Live stock you will quickly know where the dangers lie. There is much less information about the effects on Humans.

Investigation by happenstance is not enough
The BLM uses cases of accidental exposure to develop assessments of human health damage, for example: berry pickers contaminated , native Americans picking contaminated herbs., workers with contaminated gloves. , a child walking in front of the spray. .
When I read of these scenarios I see that in the category Consumption of contaminated water in a pond spill :. I believe that a worker fell into a pond during the contaminating spill of 5 substances mixed together which included: 2,4-D, Clopyralid, Glyphosate, Hexazione and Triclopyr. The worker may have consumed a swallow of contaminted water as he righted himself from his water upset. Now he becomes the standard from which a low risk from drinking contaminated water is taken. This does pertain to the Triangle Lake community if their water has become contaminated over time.

This is a happenstance approach which is all the BLM has with respect to human effects. It does not address a whole community experiencing aerial spraying of multiple chemicals, almost every year or twice a year. Such chronic exposure of these individuals and their environment has not been systematically studied.

Most of the evidence is for herbicides is not likely to be based on many specific instances, except for 2,4 -D which we all remember as the cause for thinning egg shells of Ospreys and Eagles. That case is interested to me because I believe the 2,4-D was stored in the **fat of the birds**. Its symptom was the development of thin eggs, too thin to support the brooding parents without breaking. How is 2,4,-D stored in the human body?? Human hormones often reside at least partially in human fat. Substances that effect hormones may reside there as well?

Are the correct substances of the human body being investigated?

I believe that urine samples will identify recent exposure. But if harmful substances are stored in body

probably the urine will NOT be the best place to sample for determining that. In the Triangle Lake website from Karen Bishop we had recently been given a link to an expert paper about 2,4,-D., a Toxological view :This is a summary:of his comment. He said that concerning 2,4-D more information would be found in plasma (i.e. blood) with respect to prediction of the target tissue, concentration and responses (eg. Neurotoxic responses). This would be especially true under conditions which were episodic or in higher levels of exposure.
What I understand this to mean is that 2,-4-D and other substances may be incorporated, or stored in the body.. or which part of the body will gather up and expell the contaminant.
Based on this comment Should we be testing blood ?
“”

Why livestock issues are important

In the summary of herbicides which follow this letter, you will notice the category of Livestock issues. Cows are more easily considered as subjects for exposure. When you notice that cows must be removed from areas sprayed ,you can realize that they are being kept from harm. Notice particularly that dairy cows, or as it sometimes is called, lactating cows need particularly to be removed, or protected from exposure to herbicides .
Notice also the amount of time herbicides take to clear the body: this is indicated in the number of days cows must be removed from contaminated field prior to slaughter. If not removed their flesh would indicate herbicide contamination and not be eligible for sale. Note cow food ie hay should not be harvested for many days after spraying. Each herbicide has its own limit. I assume longer time means the herbicide breaks down more slowly. Maybe this means it is a greater risk for people as well.

Milk samples valuable in investigation
Given the sensitivity of milk to herbicide exposure , the testing samples of the milk of community mothers (as they would allow) would provide an excellent health check . Human milk is a fatty substance developed to help babies growth well. This would be a way to investigate the possibility of the storage of herbicides in the body fat.. This may seem a strange idea but in Sweden all mother's milk is routinely checked for chemical substances. As a consequence the Swedes have reduced the presence of harmful substances each year. There maybe mothers in the community who would allow a milk sample to be taken and tested.

What about all those other chemicals 7 other Herbicides have problems as well

2,4-D is a good place to start considering health risks in the Triangle community. However the list of 7 herbicides in addition , as given to me from the library link as herbicides sprayed in Triangle Lake area, are indicated in the material that follows.

There are two types of problems in the herbicide 7. One group is linked with potential harm to cattle and I would assume needs to be voided if possible by people.

The second is less harmful directly, to people but many of these herbicides have water contamination issues. Water issues concern ground water, for example Picloram has been detected in ground water in 11 states. Some herbicides are reported to decay rapidly but in some instance of acidic/anaerobic environments they have a considerably longer persistence. A conifer forest, peat in wetland, muddy edges of ponds all might contain longer term residues of these herbicides. For example Imazapyr has a half life of 2 days but can persist 6.7years in anaerobic sediments.

Water samples from wells are planned. Let's not limit the samples to 2,4-D but include herbicides with

serious water contamination issues from. the Herbicide 7 . Herbicide harm to people may not happen only via the air, but certainly water /well contamination is a strong possibility given the extent of twice yearly spraying. Given the information about acidic and anaerobic environments and long term herbicide persistence those type of soil sediments should be analyzed for some of the most likely Herbicides. Children and adults walk, wade and play at lake edges, and muddy wetlands which may be prone to contamination.

Investigation Needed to Assess Herbicide Effects on Humans

This study of the Triangle Lake community if given the full treatment it deserves from our Local, County and State agencies will add to our knowledge about human effects of herbicide use. If this investigation is pursued as a scientific opportunity, as it is; much will be learned. No longer will we have only happenstance to rely on for human risks. from herbicide exposure.

There are those who will question the need to pursue these issues. But you know that; enough said.

Sincerely, Eleanor Ryan,

Conservation Chair, North America Butterfly Association , Eugene/Springfield Chapter